The effects of isolated telephone interventions on glycemic control in type 2 diabetes: a literature review

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CRD summary
The review concluded that available evidence did not support isolated telephone interventions to improve glycaemic control in type 2 diabetes; well-designed studies were needed to establish this. The review had some methodological problems and data limitations; hence, the authors' conclusions have to interpreted with a degree of caution.

Authors' objectives
To evaluate the impact of isolated telephone interventions on glycaemic control in adults with type 2 diabetes.

Searching
MEDLINE, PsycINFO, PsycARTICLES, Cochrane Database of Systematic Reviews, CINAHL, ClinicalTrials.gov and Academic Search Premier were searched from 1990 to 2008 for articles published in English. Search terms were reported. Reference lists of selected papers were searched.

Study selection
Quantitative studies that evaluated the impact of telephone interventions on glycaemic control in participants with type 2 diabetes were eligible for inclusion. Studies had to report glycaemic control as measured by HbA1c levels. Studies of adult patients with type 2 diabetes who either used or did not use exogenous insulin were included.

The included trials studied outgoing calls to participants with type 2 diabetes, predominantly based on tailored messages. Mean age of participants ranged from 54.5 to 67 years. The proportion of female participants ranged from 3% to 65%. The ethnicity of patients varied: some studies including all Korean participants; and others included predominantly white participants. The reported outcomes included glycaemic control as measured by HbA1c. Other outcomes (such as body mass index, healthcare utilisation, total cholesterol, patient satisfaction, behavioural outcomes, quality of life, diabetes adherence and depression) were reported.

The authors did not state how many reviewers performed study selection.

Assessment of study quality
Quality assessment of trials was based on the Cochrane Collaboration tool of randomisation, blinding, allocation concealment, loss to follow-up and selective outcome reporting. Trials were also rated according to the American Diabetes Association: A for clear evidence from good trials; B for supporting evidence from good cohort studies; C for supporting evidence from poorly controlled studies; and D for expert opinion.

The authors independently assessed study quality. Disagreements were resolved by consensus.

Data extraction
Data were extracted on change in glycaemic control as measured by HbA1c. Other outcomes (such as BMI, healthcare utilisation, total cholesterol, patient satisfaction, behavioural outcomes, quality of life, diabetes adherence and depression) were also extracted.

The number of reviewers involved in data extraction was not reported.

Methods of synthesis
A narrative synthesis was undertaken.
Results of the review
Eight RCTs were included in the review (n=2,105 participants, range 35 to 591). The quality of the included trials was deemed grade C (supporting evidence from poorly controlled studies). The main quality issues were a lack of powering, poorly reported allocation concealment, lack of detail on intervention and lack of detail regarding randomisation process.

Telephone interventions had mixed effects on glycaemic control. Four studies did not show positive effects on glycaemic control and four studies showed varying benefits on glycaemic control. Studies of shorter duration showed changes in HbA1c levels that were thought to be clinically relevant.

Authors' conclusions
Available evidence did not support isolated telephone interventions to improve glycaemic control in type 2 diabetes; well-designed studies were needed to establish this.

CRD commentary
Inclusion criteria for the review were clearly defined. Several relevant databases were searched. Publication bias was not assessed and could not be ruled out. There was potential for language bias, as only English language articles were included. Attempts were made to reduce reviewer error and bias during quality assessment; whether such attempts were made for study selection and data extraction was unclear. Quality assessment was undertaken using a standard checklist, which indicated that the included trials were generally of poor quality. A narrative synthesis appeared appropriate due to differences in study populations, interventions and poor study quality.

The review had some methodological problems and data limitations. The authors’ conclusions have to interpreted with a degree of caution.

Implications of the review for practice and research
Practice: The authors did not state any implications for practice.

Research: The authors stated that well-designed studies were needed to establish the effectiveness of telephone interventions as potentially cost-effective. Future studies should assess the effects of more advanced technologies such as automated systems, mobile phones and video messaging.

Funding
Novo Nordisk.

Bibliographic details

PubMedID
19707085

DOI
10.1097/ANS.0b013e3181b0d6d6

Original Paper URL

Indexing Status
Subject indexing assigned by NLM
MeSH
Adult; Ambulatory Care; Diabetes Mellitus, Type 2 /epidemiology /metabolism /prevention & control; Disease Management; Health Services Needs and Demand; Hemoglobin A, Glycosylated /metabolism; Humans; Nursing Evaluation Research; Patient Compliance; Patient Education as Topic /organization & administration; Randomized Controlled Trials as Topic; Research Design; Self Care; Telephone /utilization; Treatment Outcome; United States /epidemiology

AccessionNumber
12009110057

Date bibliographic record published
15/09/2010

Date abstract record published
01/06/2011

Record Status
This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.